REMARKS

I. RESTRICTION

1. Claims 12-22 should be classified in class 374, subclass 130. The claimed apparatus is an optical system structure called spectropyrometer to filter the spectral power distribution by an alexandrite effect filter, to measure the filtered spectral power distribution, and to calculate the corresponding temperature by the method claimed in claims 1-11.

Claims 12 – 22 should not be classified in class 356, subclass 43, because the spectropyrometer is not an optical pyrometer. Optical pyrometer refers to an optical device with a disappearing-filament or the likes (lamps). The brightness of the filament is adjusted until the brightness of the filament and the target are the same, and then the temperature can be obtained. The invented spectropyrometer is an unconventional pyrometer. Other types of unconventional pyrometers include multi-wavelength pyrometer, acoustic pyrometer, imaging pyrometer, anti-Raman pyrometer, Rayleigh scattering pyrometer, etc.

2. Claims 23-26 should be also classified in class 374, subclass 130. The claimed apparatus is an optical system structure called pyrometer to filter the spectral power distribution by an alexandrite effect, to measure the color of the filtered spectral power distribution, and to calculate the temperature by the method claimed in claims 1-11.

Claims 23 - 26 should not be classified in class 356, subclass 45 because the colorimetric pyrometer is not an optical pyrometer. It does not use plural color responsive to measure temperature. It uses R, G, and B detector to determine the hue of target measured for temperature measurement. In principle, the R, G, and B measurement is totally different with the plural color measurement. Plural color visual comparison is roughly similar to multi-wavelength measurement.

3. Claims 27 and 28, a cubic zirconia window is an optical element for the apparatuses in claims 12-26, therefore, should be classified in class 374, subclass 191.

Claims 27 - 28 should not be classified in class 359 because it is only an optical element in the pyrometers.

II. THE INVENTION ARE DISTINCT

Inventions I and III are related and are not distinct. The visible spectral power distribution of a target can be measured by materially different apparatuses, temperature is obtained by the invented alexandrite effect claimed in claims 1-11.

Inventions II and III are related. Both apparatuses measure the visible spectral power distribution of a target. The measurement difference is that the spectroradiometric setup in claim 12-22 separates the spectral power distribution into wavelength signals and the colorimetric setup separates the spectral power distribution into the three R, G, and B signals. Temperature is obtained by the

wavelength signals or the R, G, and B signals utilizing the alexandrite effect method claimed in claims 1-11.

Inventions II and IV are related. The cubic zirconia filter is an optic element of the spectroradiometric setup claimed in claims 12-22.

Inventions III and IV are related. The cubic zirconia filter is an optic element of the colorimetric setup claimed in claims 23-26.

III. NOTES

The temperature measurement apparatuses claimed in claims 12-26 are alexandrite effect pyrometers. If the pyrometer is set up to provide spectral power distribution of target, it is called spectropyrometer. Whatsoever, the temperature measurement apparatuses are working on the invented alexandrite effect method to provide temperature.

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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,

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